Empirical Evidence on Announcement Effect : The Case of Green Bond Offerings by Indian Companies

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Abstract

The economy of tomorrow is dependent on the adoption of sustainable practices today. The global community is rapidly adopting to climate change needs. India is ambitious and active in climate action goals. With an estimated annual requirement of $ 960 billion for sustainable development goals (SDGs), mobilizing low-cost, long-term capital remains top priority for India. The implementation of sustainable development objectives requires judicious designing and delivering of financial products and practices by the Indian financial system. On the product front, green bonds have emerged as a suitable financing instrument for mobilizing capital for a range of environmental projects. The announcements of green bonds issues generate interesting stock performances, which are indicators of investor appreciation of sustainable development decisions of the issuing companies. The paper examined the stock market reaction to green bond offerings. In a nutshell, the paper focused on the announcement effect of green bonds offered by public and private enterprises from India through the period from 2015 – 2019. The study classified the green bonds based on certification. The findings showed positive abnormal returns for more than 80% of the sample of certified green bonds during the event window. The results of the study indicated that the stock market reacted positively to certified green bond announcements and negatively for few non-certified issues.

Keywords : **green investment, green bonds, event study methodology, abnormal returns, announcement effect**

JEL Classification : G1, G14, G15

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World economies are adopting sustainable development goals perpetuated by climate - change risks. There is action on climate change with commitment by 195 nations to limit the temperature levels below 2°C in the Paris Climate summit (Kumar, Kommukuri, Bhavnani, & Sharma, 2018). India has rightly put climate change on its national agenda. The country needs an investment of close to $ 4.5 trillion by 2030 to build a climate resilient economy (Agrawal, 2019). The Indian financial sector has shown its readiness to meet this target. The sector, from time-to-time, has offered instruments and approaches to meet the critical financing needs of the nation. In this context, green bonds have emerged as a viable financing option for banks and non-banks. They are a subset of corporate bonds, whose proceeds are allocated for green investments. The fixed-income debt instruments aptly match the investment needs of big-ticket institutional investors. In India, the market for green bonds continues to remain buoyant, with diverse companies tapping the market (Agarwal & Singh, 2017). There is exponential growth in issuance of green bonds, with all issues witnessing oversubscription (Mokashi, 2018).

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Significance of the Study

In the theoretical context, raising money for climate resilient projects through debt instruments classified as 'green' is a financing decision of firms. Financing instruments must be chosen carefully by managers as they alter the capital structure leading to varying effects on the performance of a company's stock (Brealey, Myers, & Allen, 2020). Issuance of a green bond is a strategic decision that impacts the principles of value creation of corporate finance. As every finance decision is expected to maximize the value for shareholders in the long-run, it is important to understand the short-term reactions of market participants. Therefore, the present study is an attempt to empirically measure the effect of green bond offerings on stock price of a company. Precisely, the paper focuses on the announcement effect of green bonds offered by Indian companies.

The study is the foremost in examining the announcement effect of green bonds on stock prices. Therefore, it makes a significant contribution to the area of capital market research. In the past, research on capital structure changes focused on the determinants of capital structure. The 1980s saw the rise of event studies that examined the effect of equity offerings and conventional debt offerings. Green bonds are a new phenomenon. This presents an opportunity to study the effect of green bond offerings on stock prices.

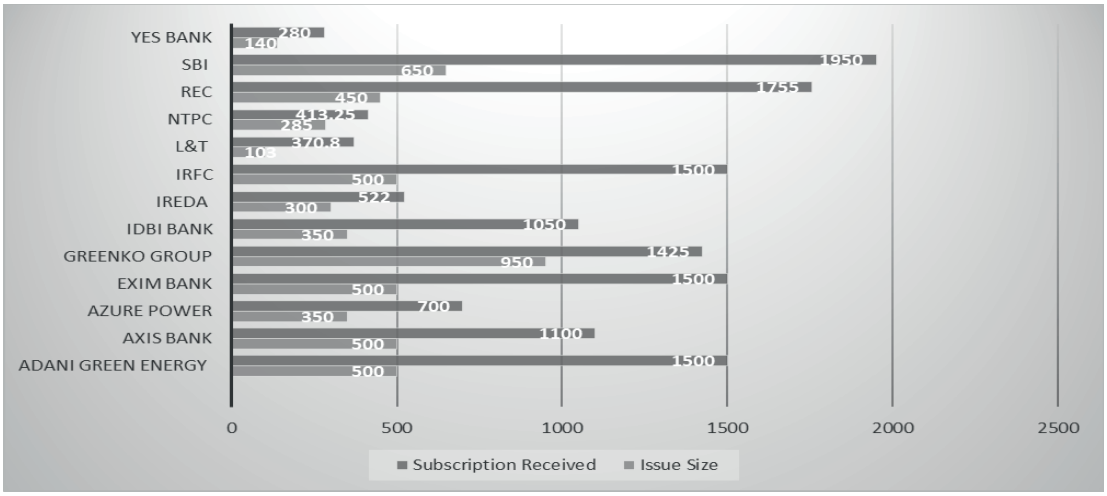
Certified vs Non - Certified Bonds

In less than a decade, green bonds have emerged as a mainstream product in the international capital markets. With heightened awareness of the financial risk arising from climate change, investors have started to adopt sustainable development goals. Globally, India ranks second in green bond transactions, with $10.3 billion issues in the first half of 2019 (Joshi, 2020). However, significant challenges exist that weaken the credibility and quality of the instrument. One of the main concerns remains green washing among others (Pronina & Freke, 2019). This mandates additional disclosures and audits compared to traditional bonds to demonstrate their green credentials as required by certifying institutions such as Climate Bonds Standard and International Capital Markets Association. This is one reason green bonds are expensive as compared to their traditional peers. According to most certification schemes, anyone can issue green bonds as long as the proceeds are used for projects with environmental benefits. The rigorous certification consists of pre-issue requirements and post-issue requirements with sector eligibility (Doran & Tanner, 2019). Certification is an external review of the 'greenness' of the project by verifying the claims made in the bond document. This makes a certified green bond transparent and marketable, instilling confidence in investors as compared to a non-certified green bond.

Overview of the Indian Green Bond Market

In India, the blueprint for green bonds was laid in 2015. The country is among the top 10 emerging markets for green bonds with $ 7.7 billion issues till 2018 (The World Bank, 2018a, 2018b). The Reserve Bank of India (RBI) has classified renewable energy as a priority sector. The Securities and Exchange Board of India (SEBI) issued guidelines for green bond issuers in 2016 and notified formal disclosure norms for listing in 2017. The regulator (SEBI) has reserved eight areas as eligible green projects. Banks are the primary issuers of green bonds to finance green projects, predominantly in renewable energy. Majority of the green bonds were issued by the public sector in 2017 followed by private sector in the subsequent years. There is a positive sentiment from international and domestic investors to Indian issues, which is evident from the oversubscription of all issues. Figure 1 presents details of issue size and the amount of subscriptions received by individual issues (Mokashi, 2018).

Figure 1. Details of Oversubscription



Source : Adapted from Mokashi, R. (2018). *Green bond market and green bond evaluation : An India perspective.* CARE Ratings Limited. Retrieved from http://acraa.com/doc/GB_06%20India_CARE_201812.pdf

Literature Review

Numerous research studies have been carried on market reactions to change in capital structure decisions in finance. Most studies are done in the Western context. Of late, event studies are noticeably increasing for emerging markets of Southeast Asia, Eastern Europe, and Latin America. Classic studies suggested that company value and debt levels were independent, implying financing decisions had no impact on firm value and that security holders were indifferent to equity and debt financing (Modigliani & Miller, 1959). However, this argument holds true only in a perfect capital market scenario.

Several studies have examined the effect of equity offerings on stock prices. These studies include both primary and secondary issues. Primary issues of equity reported a price decline of 2.5% on the announcement day (Korwar, 1983). Studies that focused on the issue date also reported a price decline in the period surrounding the issues (Hess & Frost, 1982 ; Smith Jr. 1977). Similar price decline is noted in the findings of studies on secondary offerings (Asquith & Mullins Jr., 1986). The results of the most cited study by Asquith and Mullins Jr. (1986) showed that secondary equity offerings significantly reduced stock prices. A negative abnormal return was registered for 80% of the 266 samples studied for the period from 1963 – 1981. Price decline was greater for offerings by officers and directors, supporting the view that shares cannot be sold at the prevailing market price (Mikkelson & Partch, 1985). Studies conducted in other markets reported similar negative announcement effects for equity offerings. A sample of 80 Brazilian firms, studied during 1992 – 2003 exhibited an abnormal return of –2.4% on the announcement day (Medeiros & Matsumoto, 2005).

Announcement effects of bond issues found conflicting results. As debt has a tax shield component, debt offerings have a positive impact on a firm's stock price. The study by Chin and Abdullah (2012) supported this argument. The impact on the stock price generated by the announcement of equity and debt issues carried out on Chilean companies produced no significant abnormal returns for debt offerings and negative significant abnormal returns for equity offerings (Castillo, 2004). Besides investigating standard bond announcements, study of convertible bond announcements revealed negative effects on stock prices due to the presence of the equity aspect in convertibles (Ammann, Fehr, & Seiz, 2006 ; Eckbo & Masulis, 1995). Higher the equity component, more negative is the market reaction to convertible bond announcements (Burlacu, 2000). The impact of bond rating change announcement generated interesting stock performances (Archana, Jayanna,

& Hiremath, 2015). A sample of 167 rating change announcements by four credit rating agencies through 1991 – 2015 reported average abnormal returns during the event period. However, the results were found to be statistically insignificant, stating that the upgrade or downgrade announcements carried a minimal impact on stock prices in Indian markets. Another study examined the determinants that influenced the liquidity of the Thai corporate bond market (Yakean, 2013). The study concluded that corporate entities depended on spread, yield to maturity, market rate, and issue value to raise funds, establishing the relationship between each one of them. Less fluctuation of spread, yield to maturity, and market rate encouraged corporate bond issues.

The case of green bonds is not much explored as they are relatively new financing instruments. Independent research agencies have reported on the origin, country-wise issuance, growth, and need for deepening the market. The policy guidelines required for strengthening the market for green bonds are extensively documented in special reports (Guha, 2019).

An empirical study of financial returns of green bonds and their conventional peers investigated their financial performance between 2011 and 2017 (Ley, 2017). Green bonds outperformed the conventional bonds, but with a low significance. With a view to understand the effectiveness of green bonds, a concise study on the financial, stock market, and environmental performance of companies issuing the bonds was done during the period from 2013 – 2017. The findings showed an improvement in financial performance for certified green bonds, positive stock market reaction, and an increase in environmental performance for the sample companies. The study was the first of its kind in measuring the impact of the new instrument (Flammer, 2019).

Research Gap and Research Questions

To sum up, corporate announcements generate huge responses from investors. However, to the best of our knowledge, in the Indian context, there is no study that examines the stock market reaction to green bond announcements. In this circumstance, the following research questions emerge :

- **R_1 :** How does the market react to green bond announcements ?
- **R_2 :** Does the announcement result in any abnormal return ?

Objective of the Study

To examine the stock price reactions to green bond announcements by Indian companies by conducting an event study that measures abnormal returns, if any.

Hypotheses

Based on the research questions, the hypotheses are stated as :

To understand if stock prices react to announcements, we formulate :

- **H01 :** Green bond announcements do not impact stock prices. There is no abnormal return observed around the announcement day.
- **Ha1 :** Green bond announcements impact stock prices. Abnormal return is observed around the announcement day.

To test the significance of abnormal returns :

- **H02 :** The mean abnormal return on day *t* of the green bonds announcement is equal to zero.
- **Ha2 :** The mean abnormal return on day *t* of the green bonds announcement is not equal to zero.

Research Design

Sample

The data set consists of Indian companies that issued green bonds between 2015 and 2019 that are listed on Indian and international exchanges. The green market has been tapped by government agencies like Indian Renewable Development Agency, Indian Railway Finance Corporation, State Bank of India, and Rural Electrification Corporation. The cumulative total of all green bonds sold through 2015 – 2019 from India stood at $ 7.15 bn in value. This accounts for 0.35% of overall bonds raised by Indian issuers through the period, representing a tiny fraction of the total bond issues (Mokashi, 2018).

Starting from the first green bond issue in 2015 by YES Bank, a total of 16 issues have been sold by public and private enterprises till date. The final sample list is compiled for 10 companies based on information availability. Unlisted firms are not a part of the sample due to lack of trading data. The sample is classified based on the certification of green bonds by Climate Bonds Standard. The idea is to check if the market prioritizes certification over non-certification. The announcement dates were obtained from Prowess database. The historical stock and index prices were collected for 21 days [–10 to 0 to +10] from the National Stock Exchange. Table 1 gives an overview of issue details of the sample companies.

Methodology

The study employs the seminal event study methodology developed by Fama et al. (1969) to investigate the short-run effects of green bond announcements. In order to estimate the abnormal returns around the announcement date, an event window of 10-days before the event and 10-days post announcement ($-10 \leq t \leq +10$) is constructed. The market model approach is used to compute unexpected returns. The model involves calculation of daily return for stock and index run for a period of 21 days. The well-diversified robust Nifty-50 is the chosen index for deriving market returns. These are regressed to estimate the coefficients α_i and β_i of the market model. Index return serves as an independent variable and security return serves as a dependant variable for the sample firms. Applying the output of intercept and slope coefficient from regression, the abnormal return for a company *i* on

Table 1. Overview of Sample Companies

Issue Date	Issuer	Issue Size	Coupon	Certification
16-02-2015	YES Bank	$ 140 mn	8.80	Non Certified
23-11-2015	IDBI Bank	$ 350 mn	4.25	Non Certified
06-06-2016	Axis Bank	$ 500 mn	2.88	First Certified Green Bond
05-08-2016	NTPC	$ 285 mn	7.38	Climate Bonds Standard
06-06-2017	L&T Infrastructure Finance	$ 103 mn	7.5	Non Certified
30-09-2017	IREDA	$ 300 mn	8.12	Climate Bonds Standard
13-01-2018	Indian Railway Finance Corporation	$ 500 mn	8.05	Climate Bonds Standard
12-06-2016	Adani Green Energy	$ 500 mn	6.25	Climate Bonds Standard
20-09-2018	State Bank of India	$ 650 mn		Climate Bonds Standard
30-06-2017	Rural Electrification Corporation	$ 450 mn		Climate Bonds Standard

event day t, AR_{it}, is calculated as :

$$\varepsilon_{it} = AR_{it} = R_{it} - (\alpha_i + B_i R_{mt})$$

Further to this, t - stat observes whether the observed abnormal returns are due to chance or are due to the event studied.

Analysis and Results

Table 2 shows the cumulative average abnormal returns for pre-announcement, announcement day, and post-announcement period of non-certified issues of sample companies. There is negative abnormal return of –0.374 for one sample and positive abnormal returns for two samples during the pre-announcement period. However, the announcement day abnormal returns are negative as well as high for YES Bank and IDBI Bank at –2.51% and –1.14%, respectively. This shows that markets didn't receive the information with cheer. The trend of negative abnormal returns continues for YES Bank with abnormal returns peaking to –4.834% during the post announcement period. L & T Infrastructure Finance elicited positive response from investors during the entire event window. Under reporting of bad loans coupled with legal battles could be the cause of negative market response for YES Bank (Mukherjee, 2019). Overall, there is a mixed response from market participants for green bond announcements of non-certified issues.

Table 3 presents the results of cumulative average abnormal returns of certified issues for three intervals of pre-announcement, announcement day, and post announcement period. The cumulative average abnormal returns (CAAR) during the pre-announcement period are positive for 70% of the observations. The rationale for positive pre-CAAR levels is that anticipation of green bond announcements generates positive reaction. The announcement day effect is positive for 85% of the samples, implying that certified green bonds are positive news in the market. Highest announcement day CAAR is noted for Adani Green Energy. The positive trend of CAARs continues in T+1 to T+10 event window for the samples, with the highest CAAR recorded at 3.5% for Axis Bank during the post announcement period.

Table 2. Average Cumulative Abnormal Return of Non-Certified Issues

Issuers	Pre-*CAAR*	*T* Day	Post *CAAR*
YES Bank	–0.374	–2.51	–4.834
IDBI	1.656	–1.14	0.422
L&T INFRA	1.025	0.24	1.629

Table 3. Average Cumulative Abnormal Returns of Certified Issues

Issuers	Pre-*CAAR*	*T* Day	Post *CAAR*
Adani Green Energy	1.169	2.215	1.353
Axis Bank	1.190	1.68	3.573
IREDA	–0.014	1.34	2.237
IRFC	0.180	0.185	0.383
NTPC	0.676	0.14	1.690
REC	1.294	1.229	2.402
SBI	–2.117	–0.359	–4.157

Table 4. *T* - Test : Paired Two Sample for Means of Non - Certified Issues

	Paired Differences					*t*	*df*	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
YES Bank	4.46	2.52	.84	2.52	6.39	5.32	8	.00
IDBI Bank	1.24	2.55	.85	–.72	3.19	1.45	8	.18
L & T Infrastructure Finance	–.60	.58	.19	–1.05	–.15	–3.10	8	.01

Table 5. *T*-Test : Paired Two Sample for Means of Certified Issues

	Paired Differences					*t*	*df*	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
AXIS Bank	–2.38	2.33	.78	–4.18	–.59	–3.06	8	.02
Adani Green Energy	–.25	.24	.08	–.43	–.06	–3.01	8	.02
IREDA	–2.25	1.11	.37	–3.10	–1.40	–6.09	8	.00
IRFC	–.20	.24	.08	–.39	–.02	–2.55	8	.03
NTPC	–1.01	.43	.14	–1.34	–.68	–7.05	8	.00
REC	–1.11	.70	.23	–1.65	–.57	–4.72	8	.00
State Bank of India	2.04	1.74	.58	.70	3.37	3.52	8	.01

Overall, the observations reveal positive abnormal returns for all three intervals for more than 80% of the samples in the case of certified issues. High negative CAAR levels are noted for State Bank of India during the entire event window. Majority of green bonds floated by banks receive negative reactions. This might be attributed to balance sheet woes like mounting losses and bad loans of respective banks (Iyer, 2019). The findings of the study confirm the results of a previous study, which stated positive market reaction for green bond announcements (Flammer, 2019).

Table 4 provides *t*-stat values for paired *t*-test of three sample companies. The *t*-stat values are lower than the critical value [$p < 0.05$] for two samples at the 5% significance level. However, the *t*-stat values are higher for IDBI Bank stating that cumulative abnormal returns are not significant during the three intervals. Overall, it is understood that the markets react in a mixed way for non-certified green bond announcements. The study observes that cumulative average abnormal returns are significant for two out of three samples (66.67%) for non-certified issues when tested with *t*-statistics. Therefore, the null hypotheses H01 and H02 are rejected.

Table 5 presents the *t*-stat results of certified green bonds. In the case of certified green bonds issue, the *t* - tests pick up abnormal returns as significant for all seven samples during the event period. The alternate hypotheses Ha1 and Ha2 are accepted. The test results are conclusive of the fact that green bond announcements (which are certified) impact stock prices, creating a positive reaction in the stock market.

Conclusion and Research Implications

The results of the study elucidate that the stock market reacts positively to certified green bond announcements. The market tends to respond negatively for non-certified issues. The overall trend of cumulative abnormal

returns explains that majority of the companies that issue green bonds enjoy positive price effects with few exceptions. Hence, it can be strongly stated that green bonds are effective instruments for raising money for climate-friendly projects. The positive price effect is an outcome of investors' appreciation of sustainable decisions by companies. Equivalently, it is perceived as one of those decisions that may lead to value-creation for shareholders in the long-run.

Recognizing the need, in 2015, our country signed the Paris agreement to fight climate change. As more companies are looking to tap the market for green finance, the study empirically showcases the reaction of market participants towards two categories of green bonds, certified vs non-certified. The results of the study bring forth certification as an important criterion to garner investor confidence. There is a clear need for policy discussion in this regard as the market further expands in the years to come.

Limitations of the Study and Scope for Further Research

As green bonds are designed with an aim of raising capital for climate-friendly projects, it would be worthwhile to carry out further research to study if issue of green bonds helps a company in improving its environmental footprints. The current study does not cover this aspect due to lack of data on environmental performance of individual companies in the public domain. Unlike the U.S, in India, environmental reporting is voluntary, which is a limitation.

Authors' Contribution

Dr. Rajalakshmi Vel conceived the idea of doing a research on green bonds after reading a newspaper article about the same. After discussion with Dr. Priyanka Zala, the methodology for the research was constructed. Dr. Rajalakshmi Vel referred to various research papers related to the area of the study and established the gap after a thorough literature review of past studies. Data related to the study were collected by both the authors and cross verified before tabulation. The calculations of variables and application of statistical tools were performed by Dr. Priyanka Zala using SPSS. Dr. Rajalakshmi Vel wrote the manuscript in consultation with Dr. Priyanka Zala.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter, or materials discussed in this manuscript.

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References

Agarwal, S., & Singh, T. (2017). *Unlocking the green bond potential in India.* The Energy and Research Institute (TERI). Delhi : TERI-Print Press. Retrieved from https://www.teriin.org/projects/nfa/files/Green-Bond-Working-Paper.pdf

Agrawal, S. (2019, August 11). The urgent case for green finance. *Live Mint.* Retrieved from https://www.livemint.com/news/india/the-urgent-case-for-green-finance-1565535551655.html

Ammann, M., Fehr, M., & Seiz, R. (2006). New evidence on the announcement effect of convertible and exchangeable bonds. *Journal of Multinational Financial Management, 16*(1), 43 – 63.

Archana, H. N., Jayanna, S., & Hiremath, V. (2015). Impact of bond rating changes on stock prices in India : Rating agency wise analysis. *Indian Journal of Research in Capital Markets, 2*(4), 20–32.

Asquith, P., & Mullins Jr., D. W. (1986). Equity issues and offering dilution. *Journal of Financial Economics, 15*(1– 2), 61– 89.

Brealey, R., Myers, S., & Allen, F. (2020). *Principles of corporate finance.* McGraw-Hill.

Burlacu, R. (2000). New evidence on the pecking order hypothesis: The case of French convertible bonds. *Journal of Multinational Financial Management, 10*(3 – 4), 439 – 459.

Castillo, A. (2004). The announcement effect of bond and equity issues : Evidence from Chile. *Estudios de Economía, 31*(2), 177 – 205.

Chin, S. K., & Abdullah, N. A. (2012). Announcements effect of corporate bond issuance and its determinants. *Contemporary Economics , 7*(1), 5 – 18.

Climate Bonds. (n.d.). *Climate bonds initiative.* Retrieved from https://www.climatebonds.net/certification/get-certified

Doran, M., & Tanner, J. (2019, September 23). Critical challenges facing the green bond market. *IFLR.* Retrieved from https:/www.iflr.com/Article/3893838/Critical-challenges-facing-the-green-bond-market.html

Eckbo, B. E., & Masulis, R. W. (1995). Seasoned equity offerings : A survey. In, *Handbooks in operations research and management science* (Vol. 9, pp. 1017 – 1072). Elsevier.

Flammer, C. (2019). *Green bonds : Effectiveness and implications for public policy* (Working Paper 25950). National Bureau of Economic Research. Retrieved from https://www.nber.org/papers/w25950.pdf

Guha, A. (2019). *Green bonds : Key to fighting climate change? Observer Research Foundation* (ORF Issue Brief No. 321). Retrieved from https://www.orfonline.org/wp-content/uploads/2019/10/ORF_IssueBrief_321_GreenBonds_NEW-22Oct.pdf

Hess, A. C., & Frost, P. A. (1982). Tests for price effects of new issues of seasoned securities. *The Journal of Finance, 37*(1), 11 – 25. https://doi.org/10.1111/j.1540-6261.1982.tb01092.x

Iyer, A. (2019, December 17). In the recovery game, Indian banks seem to lend it, leave it and forget it. *Live Mint.* Retrieved from https://www.livemint.com/market/mark-to-market/in-the-recovery-game-indian-banks-seem-to-lend-it-leave-it-and-forget-it-11576516681649.html

Joshi, A. (2020, February 3). India becomes second-largest market for green bonds with $10.3 billion transactions. *The Economic Times.* Retrieved from https://energy.economictimes.indiatimes.com/news/renewable/india-becomes-second-largest-market-for-green-bonds-with-10-3-billion-transactions/73898149

Korwar, A. (1983). *The effect on new issues of equity : An empirical investigation* (Unpublished Working Paper), University of Iowa, Iowa City.

Kumar, A., Kommukuri, C. S., Bhavnani, C., & Sharma, A. (2018). *Innovating paths to sustainable finance in India.* Retrieved from https://www.yesbank.in/pdf/innovative_pathways_finance_india_pdf

Ley, L. W. (2017). *A comparative study on the financial performance of green bonds and their conventional peers* (Master Thesis in Financial Economics), Erasmus School of Economics, Netherlands.

Medeiros, O. R., & Matsumoto, A. S. (2005). Brazilian market reaction to equity issue announcements. *Brazilian Administration Review, 2*(2), 35 – 46. https://doi.org/10.1590/S1807-76922005000200004

Modigliani, F., & Miller, M. H. (1959). The cost of capital, corporation finance, and the theory of investment : Reply. *The American Economic Review, 49*(4), 655 – 669.

Mokashi, R. (2018). *Green bond market and green bond evaluation : An India perspective.* CARE Ratings Limited. Retrieved from http://acraa.com/doc/GB_06%20India_CARE_201812.pdf

Mukherjee, A. (2019, May 16). YES Bank troubles run deeper than investors believe ; cleanup will be tough. *Business Standard.* Retrieved from https://www.business-standard.com/article/finance/yes-bank-s-troubles-run-deeper-than-investors-believe-cleanup-a-tough-job-119051600110_1.html

Pronina, L., & Freke, T. (2019). As green bonds boom, so do 'greenwashing' worries. *Bloomberg.* Retrieved from https://www.bloomberg.com/: bloomberg.com/news/articles/2019-10-14/as-green-bonds-boom-so-do-greenwashing-worries-quicktake

Smith Jr., C. W. (1977). Alternative methods for raising capital : Rights versus underwritten offerings. *Journal of Financial Economics, 5*(3), 273 – 307.

The World Bank. (2018a., November 16). *From evolution to revolution : 10 years of green bonds* [video]. Retrieved from https://www.worldbank.org: https://www.worldbank.org/en/events/2018/11/16/from-evolution-to-revolution-10-years-of-green-bonds

The World Bank. (2018b., November 27). *From evolution to revolution : 10 years of green bonds.* Retrieved from https://www.worldbank.org/en/news/feature/2018/11/27/from-evolution-to-revolution-10-years-of-green-bonds

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